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TITLE: Caspase-dependent ceramide production in Fas- and HLA-AB. We recently demonstrated that the engagement of HLA class I alpha1 domain induced Fas-independent apoptosis in human T and B lymphocytes. We analyzed the signaling pathway involved in HLA class I-mediated apoptosis in comparison with Fas (APO-1, CD95)-dependent apoptosis. The mouse mAb90 or the rat YTH62 monoclonal antibodies which bind the human HLA class I alpha1 domain induced the production of ceramide which was blocked by addition of phosphatidylcholine-dependent phospholipase C inhibitor, D609. Furthermore, HLA class I-mediated apoptosis involved at least two different caspases, an interleukin-1 converting enzyme-like protease and another protease inhibited by the CPP32-like protease inhibitor Ac-DEVD-CHO. Despite similarity between Fas and HLA class I signaling pathways, we failed to demonstrate any physical association between these two molecules. We also report that the pan-caspase inhibitor, peptide zVAD-fmk, but not Ac-DEVD-CHO and Ac-YVAD-CHO, inhibited decrease of mitochondrial transmembrane potential and generation of ceramide induced by anti-HLA class I and anti-***Fas***, ***monoclonal***, ***antibodies***, whereas all three peptides efficiently ***inhibited*** apoptosis. Altogether these results suggest that signaling through ***Fas*** and HLA class I involve caspase(s), targeted by zVAD-fmk, which act upstream of ceramide generation and mitochondrial events, whereas interleukin-1 converting enzyme-like and CPP32-like proteases act downstream of the mitochondria.

L6 ANSWER 1 OF 18 PATOSWO COPYRIGHT 1998 WILA

WILA PCT-PUBLICATION

ABEN A novel humanized immunoglobulin reacting specifically with a Fas ligand and active fragments thereof are provided and a region on a Fas ligand which is important in inhibiting apoptosis induced by cells with Fas expression on the basis of the Fas-Fas ligand interaction is clarified. The novel humanized immunoglobulin and active fragments thereof are prepared by the recombinant DNA techniques from hybridomas which produce a ***monoclonal*** ***antibody*** reacting specifically with a ***Fas*** ligand. This immunoglobulin can ***inhibit*** ***Fas*** ligand*** and ***Fas***, typified by apoptosis. By specifying the region participating in the induction of apoptosis there, there have been constructed recombinant proteins and peptides which react specifically with the amino acids contained in this region to thereby inhibit apoptosis and are thus applicable to novel remedies, clinical diagnostic drugs, etc.

L6 ANSWER 2 OF 18 MEDLINE DOCUMENT NUMBER: 1998148050

DOCUMENT NUMBER: 98148050

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expression was high in both TS- and Thy4 cells. However, FasL, class I-mediated peripheral T cell apoptosis, was up-regulated in TS-cells at 48 hr, when cells were undergoing late apoptosis, and in Thy4 cells at 96 hr, correlating with the delayed onset of thymineless death. FasL expression also correlated with acute apoptosis induced in parental GE/3J cells, commencing at 48 hr, following thymidine synthase ***inhibition*** by 5-fluorouracil/leucovorin exposure. ***Fas*** -mediated apoptosis induced by the cytotoxic anti-***Fas*** ***monoclonal*** ***antibody*** CH-11 was ***inhibited*** following adenoviral delivery of a Ba-2 cDNA, and Ba-2 also protected cells from acute apoptosis induced by dTdtL deprivation. Taken together, these data demonstrate a functional Fas system in these cultured colon carcinoma cell models, and they demonstrate that Fas-FasL interactions can link DNA damage induced by thymineless stress to the apoptotic machinery of colon carcinoma cells.

L6 ANSWER 2 OF 18 MEDLINE

ACCESSION NUMBER: 1998013099 MEDLINE

DOCUMENT NUMBER: 98013099

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expression was high in both TS- and Thy4 cells. However, FasL, class I-mediated peripheral T cell apoptosis, was up-regulated in TS-cells at 48 hr, when cells were undergoing late apoptosis, and in Thy4 cells at 96 hr, correlating with the delayed onset of thymineless death. FasL expression also correlated with acute apoptosis induced in parental GE/3J cells, commencing at 48 hr, following thymidine synthase ***inhibition*** by 5-fluorouracil/leucovorin exposure. ***Fas*** -mediated apoptosis induced by the cytotoxic anti-***Fas*** ***monoclonal*** ***antibody*** CH-11 was ***inhibited*** following adenoviral delivery of a Ba-2 cDNA, and Ba-2 also protected cells from acute apoptosis induced by dTdtL deprivation. Taken together, these data demonstrate a functional Fas system in these cultured colon carcinoma cell models, and they demonstrate that Fas-FasL interactions can link DNA damage induced by thymineless stress to the apoptotic machinery of colon carcinoma cells.

L6 ANSWER 3 OF 18 MEDLINE

ACCESSION NUMBER: 97413603 MEDLINE

DOCUMENT NUMBER: 97413603

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AB Induction of apoptosis is considered to be the underlying mechanism that accounts for the efficiency of chemotherapeutic drugs. It has recently been proposed that induction of Fas ligand (FasL) expression with subsequent autocrine and/or paracrine induction of cell death through binding to the Fas (Apo-1/CD95) membrane accounts for chemotherapy-associated apoptosis. In the present study, we analyzed the significance of FasL expression in the mediation of drug-induced apoptosis in the T-acute lymphatic leukemia model CEM.

In particular, we examined the potential of the tumor drugs fludarabine, doxorubicin, and cisplatin to induce FasL expression. We also raised the question of whether apoptosis induced by these drugs occurs through the Fas pathway and hence can be blocked by the cowpox virus protein CmvA, a specific inhibitor of this pathway. All tumor drugs examined led to an increase in FasL protein. However, overexpression of CmvA had no effect on drug-induced apoptosis. Moreover, neither incubation with *****inhibitory***** *****antibodies***** *****antibodies***** against *****Fas***** that completely prevented *****Fas*****-induced apoptosis in these cells nor pretreatment with a *****monoclonal***** *****antibody***** to FasL affected drug-induced cell death. Our observations suggest a Fas/FasL-independent mechanism for drug-induced apoptosis and exclude the involvement of caspase 1 and caspase 8 in this process in T-acute lymphatic leukemia cells.

L6 ANSWER 6 OF 18 MEDLINE DUPLICATE 5
DOCUMENT NUMBER: 930000988 MEDLINE
TITLE: An Fc gamma receptor I (CD64)-negative subpopulation of human peripheral blood monocytes is resistant to killing by antigen-activated cytotoxic T cells.
AUTHOR: M. Flad H. D. Projani J. Gräfe-Gribovskow E. Butan J. Löffelholz H. Los M. Ernst CORPORA TE SOURCE: Forschungszentrum Bösel, Department of Immunology and Cell Biology, Germany.
LANGUAGE: English
FILE SEGMENT: Priority Journals; Cancer Journals
ENTRY MONTH: 19980104

AB It has been demonstrated that in monocyte/T cell co-cultures activated with recall antigens, cytotoxic T cells were generated which are able to reduce the number of antigen-presenting monocytes. In previous studies we could show that a minor subset of monocytes, the Fc gamma receptor I-negative (CD64-) monocytes, exhibits significantly higher antigen-presenting capacity than the main population of monocytes (>90%) which are Fc gamma receptor I-positive (CD64+). Therefore, we addressed the question whether they are also differentially susceptible to T cell-mediated killing. In the present study we demonstrate that the CD64- monocyte subset is more resistant to killing by antigen-activated T cells than CD64+ monocytes, as indicated by a higher viability and recovery of CD64- monocytes. This mechanism involves CD95 (Fas) antigen, since partially *****reduced***** by blocking anti-*****Fas***** *****monoclonal***** *****antibodies***** (mAb). In agreement with this finding, although CD95 antigen was expressed on CD64+ and CD64- monocytes at comparable levels, killing of CD64- monocytes by activating anti-Fas mAb was lower than of CD64+ monocytes.

L6 ANSWER 7 OF 18 EMBASE COPYRIGHT 1998 ELSEVIER SCI.
B.V.DUPLICATE 6
ACCESSION NUMBER: 1998096148 EMBASE
TITLE: The Fas signaling pathway is functional in colon carcinoma cells and induces apoptosis.
AUTHOR: Houghton J.A.; Harwood F.G.; Gibson A.A.; Tillman D.M.
CORPORATE SOURCE: J.A. Houghton, Department of Molecular Pharmacology, St. Jude Children's Res. Hospital, 322 North Lauderdale, Memphis, TN 38105, United States
SOURCE: Clinical Cancer Research (1997) 3/121 (2205-2209).

Ref: 19
ISSN: 1071-0432 CODEN: CCREF4

COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 016 Cancer
LANGUAGE: English
SUMMARY LANGUAGE: English

AB Fas is expressed in colonic epithelial cells and is also expressed in colon carcinomas, although its functional significance in the regulation of apoptosis in cells outside of the immune system remains unknown. In this study, we determined the role of Fas signaling on cellular growth of cultured colon carcinoma cells and demonstrated apoptosis induced by a cytotoxic anti-Fas monoclonal antibody (CH-11) in cells of the GC3/c1 lineage (CG3/c1, TS-, Thy-1) but not in HCT116 or Caco2 cells. Growth inhibition was detected at concentrations of CH-11 as low as 1 ng/ml and clonogenic survival studies yielded IC50 values of 3.5-26 ng/ml. Cytotoxicity was *****inhibited***** by *****monoclonal***** *****antibody***** *****inhibition***** *****antibody***** signaling. In addition, the survival factor Bcl-2, which has demonstrated inconsistent protective effects against Fas signaling in other systems, was inhibitory to Fas-induced apoptosis in colon carcinoma cells after adenoviral transduction. Fas was expressed at the highest levels in TS- and Thy1 cells, which were the most sensitive cell lines to Fas-induced apoptosis. FAP-1, a protein tyrosine phosphatase that interacts with the cytosolic negative regulatory domain of Fas, was expressed in each cell line but did not correlate with sensitivity to Fas-mediated apoptosis. These data have therefore identified a functional Fas pathway in colon carcinoma cells when Fas is expressed at high level. Hence, the role of Fas signaling in the regulation of apoptosis in colon carcinoma cells and its role influencing the response to treatment with chemotherapeutic agents should be further explored.

L6 ANSWER 8 OF 18 MEDLINE DUPLICATE 7
DOCUMENT NUMBER: 97280693 MEDLINE
TITLE: Fas-mediated apoptosis in human prostatic carcinoma cell lines.
AUTHOR: Roklin O.W.; Bishop G.A.; Hostager B.S.; Waldschmidt T.J.; Sidorovskiy S.P.; Pavloff N.; Kiefer M.C.; Ulanovsky S.R.; Grover R.A.; Cohen M.B.
CORPORATE SOURCE: Department of Pathology, University of Iowa, Iowa City 52242, USA
CONTRACT NUMBER: AL2847 (NIAID)
DK25293 (NIDDK)
T32A0726 (NIAID)
+
SOURCE: CANCER RESEARCH (1997 May 1) 57 (9) 1758-68.
PUBLICATION: Journal code: CNF. ISSN: 0008-5472.

PUBLICATION: Journal: Article; (JOURNAL, ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals; Cancer Journals
ENTRY MONTH: 199707
ENTRY WEEK: 19970704
AB It has been demonstrated that in monocyte/T cell co-cultures activated with recall antigens, cytotoxic T cells were generated which are able to reduce the number of antigen-presenting monocytes. In previous studies we could show that a minor subset of monocytes, the Fc gamma receptor I-negative (CD64-) monocytes, exhibits significantly higher antigen-presenting capacity than the main population of monocytes (>90%) which are Fc gamma receptor I-positive (CD64+). Therefore, we addressed the question whether they are also differentially susceptible to T cell-mediated killing. In the present study we demonstrate that the CD64- monocyte subset is more resistant to killing by antigen-activated T cells than CD64+ monocytes, as indicated by a higher viability and recovery of CD64- monocytes. This mechanism involves CD95 (Fas) antigen, since partially *****reduced***** by blocking anti-*****Fas***** *****monoclonal***** *****antibodies***** (mAb). In agreement with this finding, although CD95 antigen was expressed on CD64+ and CD64- monocytes at comparable levels, killing of CD64- monocytes by activating anti-Fas mAb was lower than of CD64+ monocytes.

L6 ANSWER 9 OF 18 MEDLINE DUPLICATE 8
DOCUMENT NUMBER: 97272088 MEDLINE
TITLE: Differential induction of apoptosis by Fas-Fas ligand interactions in human monocytes and macrophages.
AUTHOR: Kienz P.A.; Davis P.M.; Stuhr G.; Melvin C.; Kubanoff S.J.; Lebedter J.A.; Liles W.C.
CORPORATE SOURCE: Immunological Diseases, Bristol-Myers Squibb Pharmaceutical Research Institute, Seattle, Washington 98121, USA
SOURCE: JOURNAL OF EXPERIMENTAL MEDICINE (1997 Apr 21) 185 (8) 1511-6.
PUBLICATION: Journal code: 12V. ISSN: 0022-1907.
PUBLICATION: Journal: Article; (JOURNAL, ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals; Cancer Journals
ENTRY MONTH: 199707
ENTRY WEEK: 19970703
AB Human monocytes undergo spontaneous apoptosis in vitro. removal of serum from the media dramatically increases the rate of this process. Monocyte apoptosis can be significantly abrogated by the addition of growth factors or proinflammatory mediators. We have evaluated the role of the endogenous Fas-Fas ligand (FasL) interaction in the induction of this spontaneous apoptosis and found that a *****Fas*****-immunoglobulin (Ig) fusion protein, an *****antagonistic***** anti-*****Fas***** *****monoclonal***** *****antibody***** and a rabbit anti-FasL antibody all greatly *****reduced***** the onset of apoptosis. The results indicate that spontaneous death of monocytes is mediated via an autocrine or paracrine pathway. Treatment of the cells with growth factors or cytokines that prevented spontaneous apoptosis had no major effects on the expression of Fas or FasL. Additionally, monocyte-derived macrophages were found to express both Fas and FasL but did not undergo spontaneous apoptosis and were not sensitive to stimulation by an agonistic anti-Fas IgM. These results indicate that protective mechanisms in these cells exist at a site downstream of the receptor-ligand interaction.

L6 ANSWER 10 OF 18 MEDLINE DUPLICATE 9
DOCUMENT NUMBER: 97477420 MEDLINE
TITLE: Interleukin-1 beta converting enzyme-like protease involvement in Fas-induced and activation-induced peripheral blood T cell apoptosis in HIV infection.
AUTHOR: Katsis P.D.; Garcia-Ojeda M.E.; Torres-Roca J.F.; Tijue J.M.; Smith C.A.; Herzberg L.A.; Herzberg L.A.
CORPORATE SOURCE: Department of Genetics, Stanford University School of Medicine, California 94301, USA. katsis@uhsa.edu
CONTRACT NUMBER: AI-07290 (NIAID)
CA 42509 (NCI)
+
SOURCE: JOURNAL OF EXPERIMENTAL MEDICINE (1997 Oct 20) 186 (8) 1365-72.
PUBLICATION: Journal code: 12V. ISSN: 0022-1907.
PUBLICATION: Journal: Article; (JOURNAL, ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals; Cancer Journals
ENTRY MONTH: 199801
ENTRY WEEK: 19980104
AB TNF-related apoptosis-inducing ligand can mediate activation-induced T cell death in HIV infection. Using Western blot analysis, we found abundant expression of p55 in the cytoplasm of two Fas-resistant cell lines, DU145 and ND1, and did not find p55 in two Fas-sensitive cell lines, PC3 and ALV-A3. Western blot and PCR analysis did not show consistent differences between cell lines examined in the expression of Bcl-2, Bcl-X(L), Bcl-X(S), and Bak. In contrast, Bax protein was not detected in two Fas-resistant cell lines, DU145 and ND1. We also showed that three Fas-resistant cell lines, DU145, ND1, and PC3, expressed CD40, whereas the two Fas-sensitive cell lines, PC3 and ALV-A3, were CD40 negative. Fas-sensitive cell lines were transfected with the cDNA encoding CD40, and the CD40-positive

transfected became more resistant to growth *****inhibition***** mediated by treatment with TNF-alpha and anti-*****Fas***** *****monoclonal***** *****antibody*****. Treatment with cycloheximide converted the phenotype of resistant cell lines from Fas resistant to Fas sensitive. Moreover, anti-Fas treatment of both resistant and sensitive cell lines induced rapid tyrosine phosphorylation or dephosphorylation of multiple proteins. These results suggest that the apoptotic machinery involved in DNA fragmentation is already in place in Fas-resistant cell lines, and thus, Fas-mediated apoptosis could be a target for therapeutic intervention.

L6 ANSWER 9 OF 18 MEDLINE DUPLICATE 8
DOCUMENT NUMBER: 97272088 MEDLINE
TITLE: Differential induction of apoptosis by Fas-Fas ligand interactions in human monocytes and macrophages.
AUTHOR: Kienz P.A.; Davis P.M.; Stuhr G.; Melvin C.; Kubanoff S.J.; Lebedter J.A.; Liles W.C.
CORPORATE SOURCE: Immunological Diseases, Bristol-Myers Squibb Pharmaceutical Research Institute, Seattle, Washington 98121, USA
SOURCE: JOURNAL OF EXPERIMENTAL MEDICINE (1997 Apr 21) 185 (8) 1511-6.
PUBLICATION: Journal code: 12V. ISSN: 0022-1907.
PUBLICATION: Journal: Article; (JOURNAL, ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals; Cancer Journals
ENTRY MONTH: 199707
ENTRY WEEK: 19970703
AB Human monocytes undergo spontaneous apoptosis in vitro. removal of serum from the media dramatically increases the rate of this process. Monocyte apoptosis can be significantly abrogated by the addition of growth factors or proinflammatory mediators. We have evaluated the role of the endogenous Fas-Fas ligand (FasL) interaction in the induction of this spontaneous apoptosis and found that a *****Fas*****-immunoglobulin (Ig) fusion protein, an *****antagonistic***** anti-*****Fas***** *****monoclonal***** *****antibody***** and a rabbit anti-FasL antibody all greatly *****reduced***** the onset of apoptosis. The results indicate that spontaneous death of monocytes is mediated via an autocrine or paracrine pathway. Treatment of the cells with growth factors or cytokines that prevented spontaneous apoptosis had no major effects on the expression of Fas or FasL. Additionally, monocyte-derived macrophages were found to express both Fas and FasL but did not undergo spontaneous apoptosis and were not sensitive to stimulation by an agonistic anti-Fas IgM. These results indicate that protective mechanisms in these cells exist at a site downstream of the receptor-ligand interaction.

L6 ANSWER 10 OF 18 MEDLINE DUPLICATE 9
DOCUMENT NUMBER: 97477420 MEDLINE
TITLE: Interleukin-1 beta converting enzyme-like protease involvement in Fas-induced and activation-induced peripheral blood T cell apoptosis in HIV infection.
AUTHOR: Katsis P.D.; Garcia-Ojeda M.E.; Torres-Roca J.F.; Tijue J.M.; Smith C.A.; Herzberg L.A.; Herzberg L.A.
CORPORATE SOURCE: Department of Genetics, Stanford University School of Medicine, California 94301, USA. katsis@uhsa.edu
CONTRACT NUMBER: AI-07290 (NIAID)
CA 42509 (NCI)
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SOURCE: JOURNAL OF EXPERIMENTAL MEDICINE (1997 Oct 20) 186 (8) 1365-72.
PUBLICATION: Journal code: 12V. ISSN: 0022-1907.
PUBLICATION: Journal: Article; (JOURNAL, ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals; Cancer Journals
ENTRY MONTH: 199801
ENTRY WEEK: 19980104
AB TNF-related apoptosis-inducing ligand can mediate activation-induced T cell death in HIV infection. Using Western blot analysis, we found abundant expression of p55 in the cytoplasm of two Fas-resistant cell lines, DU145 and ND1, and did not find p55 in two Fas-sensitive cell lines, PC3 and ALV-A3. Western blot and PCR analysis did not show consistent differences between cell lines examined in the expression of Bcl-2, Bcl-X(L), Bcl-X(S), and Bak. In contrast, Bax protein was not detected in two Fas-resistant cell lines, DU145 and ND1. We also showed that three Fas-resistant cell lines, DU145, ND1, and PC3, expressed CD40, whereas the two Fas-sensitive cell lines, PC3 and ALV-A3, were CD40 negative. Fas-sensitive cell lines were transfected with the cDNA encoding CD40, and the CD40-positive

AB Apoptosis of peripheral blood T cells has been suggested to play an important role in the pathogenesis of human immunodeficiency virus (HIV) infection. Spontaneous, Fas (CD95)-induced and activation-induced T cell apoptosis have all been described in peripheral blood mononuclear cell cultures of HIV-infected individuals. We have previously shown that activation-induced T cell apoptosis is Fas independent in peripheral blood T cells from HIV+ individuals. In this study, we extend and confirm these observations by using an inhibitor of interleukin-1 beta converting enzyme (ICE) homologues. We show that z-VAD-fmk, a tripeptide inhibitor of ICE homologues, can inhibit Fas-induced apoptosis of peripheral blood CD4(+) and CD8(+) T cells from asymptomatic HIV+ individuals. z-VAD-fmk also inhibited activation (anti-CD3)-induced CD4(+) and CD8(+) T cell apoptosis in some but not all asymptomatic HIV+ individuals. Apoptosis was measured by multiparameter flow cytometry. The z-VAD-fmk inhibitor also enhanced survival of T cells in anti-Fas or anti-CD3 antibody-treated cultures and inhibited DNA fragmentation. AICD that could be *****inhibited***** by z-VAD-fmk was ****"Fas"***** independent and could be *****inhibited***** with a blocking *****monoclonal***** *****"antibody"***** to tumor necrosis factor-related apoptosis-inducing ligand (TRAIL). A recently described member of the TNF/nerve growth factor ligand family, The above findings show that Fas-induced T cell apoptosis is ICE independent in HIV infection. AICD can be blocked by ICE inhibitors in some patients, and this AICD is mediated by TRAIL. These results show that TRAIL can be a mediator of AICD in T cells. These different mechanisms of peripheral blood T cell apoptosis may play different roles in the pathogenesis of HIV infection.

L6 ANSWER 11 OF 18 MEDLINE DUPLICATE 10
ACCESSION NUMBER: 97463236 MEDLINE
DOCUMENT NUMBER: 9746326 TITLE:
Yagita H Contribution of Fas ligand to T cell-mediated hepatic injury in mice.

AUTHOR: Seino K, Kayagaki N, Takeda K, Fukao K, Okumura K, Corporate Source: Department of Immunology, Junshendo University School of Medicine, Tokyo, Japan.

SOURCE: GASTROENTEROLOGY, (1997 Oct) 113 (4) 1315-22.

PUB. COUNTRY: United States
Journal: Article; (JOURNAL ARTICLE)

LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals; Cancer Journals

ENTRY MONTH: 199712

AB BACKGROUND & AIM(S): Fas has been implicated in liver damage. The aim of this study was to investigate the role of its ligand to induce hepatocyte death and liver damage in T cell-dependent hepatitis.

METHODS: Fas ligand-mediated lysis of primary hepatocytes from 3T3-LU6 wild-type, Fas ligand-deficient gld, and Fas-deficient lpr mice and concanavalin A-induced hepatitis in these mice were assessed. RESULTS: Freshly isolated hepatocytes from wild-type or gld mice, but not those from mice, were susceptible to Fas ligand-mediated lysis. When concanavalin A was intravenously administered into wild-type mice, they developed acute hepatic injury with massive degenerative changes in hepatocytes. In contrast, both gld and lpr mice had lower aminotransferase levels with milder histological changes. Reverse-transcription polymerase chain reaction and flow cytometric analysis showed that Fas ligand was induced in the liver shortly after the concanavalin A injection and was predominantly expressed on nonhepatitic T cells.

Administration of *****monoclonal***** *****"antibody"***** neutralizing mouse *****Fas"***** *****"ligand"***** could *****reduce***** the aminotransferase increase. CONCLUSIONS: The results indicate that ****"Fas"***** *****"ligand"***** plays a role in the T cell-dependent hepatitis induced by concanavalin A.

L6 ANSWER 12 OF 18 MEDLINE DUPLICATE 11
ACCESSION NUMBER: 97180151 MEDLINE
DOCUMENT NUMBER: 97180151 TITLE:
Involvement of Fas-mediated apoptosis in the inhibitory effects of interferon-gamma in chronic myelogenous leukemia.

AUTHOR: Sellen C, Sato T, Del Vecchio L, Luciano L, Barrett
CORPORATE SOURCE: Hematology Division, Federico II University Medical School, Naples, Italy.

SOURCE: BLOOD, (1997 Feb 1) 89 (3) 957-64.

AB Interferon-alpha (IFN-alpha) is an established treatment for chronic myelogenous leukemia (CML) in chronic phase, but the mechanism of action might include the induction of apoptosis, and especially Fas-mediated cell killing may play an important role in the elimination of malignant cells. We investigated Fas receptor (Fas-R) expression and the consequences of Fas-R triggering in CML patients. Using two-color flow cytometry, we found a significantly higher number of Fas-R-expressing CD34+ cells in the bone marrow (BM) of CML patients compared with normal subjects. We have previously shown that IFN-gamma induces Fas-R expression on CD34+ cells; in this study, we investigated whether IFN-alpha induces Fas-R expression on CML progenitor cells. Dose-dependent induction of Fas-R expression was observed after IFN-alpha stimulation of CD34+ cells isolated from CML BM. In methylcellulose culture, IFN-alpha alone at a therapeutic concentration showed only marginal antiproliferative effects on both normal and CML BM progenitors. In contrast, a *****Fas"***** R agonist, the anti-CD5 *****monoclonal***** *****"antibody"***** CH11, *****inhibited***** colony formation from normal progenitors, and the inhibition was even stronger on CML progenitors. When CML BM cells were cultured in the presence of IFN-alpha, Fas-R-mediated inhibition of colony growth was potentiated in a dose-dependent fashion, consistent with IFN-alpha induction of Fas-R expression. This functional effect did not require the presence of accessory cells, since similar results were obtained with purified CD34+ 3T3-LU6 cells. In suspension cultures, we demonstrated that suppression of CML hematopoiesis by IFN-alpha and Fas-R agonist through Fas-R-mediated induction of apoptosis. Our findings suggest that the Fas-R/Fas-ligand system might be involved in the immunologic regulation of CML progenitor growth and that its effect can be amplified by IFN-alpha.

L6 ANSWER 13 OF 18 MEDLINE DUPLICATE 12
ACCESSION NUMBER: 998042470 MEDLINE
DOCUMENT NUMBER: 99804270 TITLE:
Fas/Fas ligand interaction regulates cytotoxicity of CD4+ T cells against staphylococcal enterotoxin B-treated epithelial cells.

AUTHOR: Urayama S, Kawakami A, Matsukata N, Tsuboi M, Corporate Source: First Department of Internal Medicine, Nagasaki University School of Medicine, Japan.

SOURCE: BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, (1997 Oct 29) 239 (3) 762-8.

PUB. COUNTRY: United States
Journal: Article; (JOURNAL ARTICLE)

LANGUAGE: English
FILE SEGMENT: Priority Journals; Cancer Journals

ENTRY MONTH: 199802

AB Transaldolase (TAL) is a key enzyme of the reversible nonoxidative branch of the pentose phosphate pathway (PPP), that is responsible for the generation of NADPH to maintain glutathione at a reduced state (GSH) and, thus, to protect cellular integrity from reactive oxygen intermediates (ROIs). Formation of ROIs have been implicated in certain types of apoptotic cell death. To evaluate the role of TAL in this process, Jurkat human T cells were permanently transfected with TAL expression vectors oriented in the sense or antisense direction. Overexpression of TAL resulted in a decrease in glucose-6-phosphate dehydrogenase and 6-phosphogluconate dehydrogenase activities and NADPH and GSH levels and rendered these cells highly susceptible to apoptosis induced by serum deprivation, hydrogen peroxide, nitric oxide, tumor necrosis factor-alpha, and anti-****"Fas"***** *****monoclonal***** *****"antibody"*****. In addition, *****reduced***** levels of TAL resulted in increased glucose-6-phosphate dehydrogenase and 6-phosphogluconate dehydrogenase activities and increased GSH levels with inhibition of apoptosis in all five model systems. The effect of TAL expression on susceptibility to apoptosis through regulating the PPP and GSH production is consistent with an involvement of ROIs in each pathway tested. Production of ROIs in Fas-mediated cell death was further substantiated by measurement of intracellular ROI production with oxidation-sensitive fluorescent probes, by the protective effects of GSH precursor, N-acetyl cysteine, free radical spin traps 5,5-dimethyl-1-pyrroline-1-oxide and 3,3,5,5-tetramethyl-1-pyrroline-1-oxide, the antioxidants dexteroxamine, nordihydroguaiaretic acid and Amval, and by the enhancing effects of GSH depletion with buthione sulfoximine. The results provide definitive evidence that TAL has a role in regulating the balance between the two branches of PPP and its overall output as measured by GSH production and thus influences sensitivity to cell death signals.

L6 ANSWER 14 OF 18 MEDLINE DUPLICATE 13
ACCESSION NUMBER: 97115642 MEDLINE
DOCUMENT NUMBER: 97115642 TITLE:
Glutathione levels and sensitivity to apoptosis are regulated by changes in transaldolase expression.

AUTHOR: Banik L, Hunter E, Colombo E, Gondweoff N, Perl A, Corporate Source: Department of Pathology, State University of New York Health Science Center, College of Medicine, Syracuse, New York 13210, USA.

SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1996 Dec 20) 271 (51) 31994-3001.

PUB. COUNTRY: United States
Journal: Article; (JOURNAL ARTICLE)

LANGUAGE: English
FILE SEGMENT: Priority Journals; Cancer Journals

ENTRY MONTH: 199703

AB Transaldolase (TAL) is a key enzyme of the reversible nonoxidative branch of the pentose phosphate pathway (PPP), that is responsible for the generation of NADPH to maintain glutathione at a reduced state (GSH) and, thus, to protect cellular integrity from reactive oxygen intermediates (ROIs). Formation of ROIs have been implicated in certain types of apoptotic cell death. To evaluate the role of TAL in this process, Jurkat human T cells were permanently transfected with TAL expression vectors oriented in the sense or antisense direction. Overexpression of TAL resulted in a decrease in glucose-6-phosphate dehydrogenase and 6-phosphogluconate dehydrogenase activities and NADPH and GSH levels and rendered these cells highly susceptible to apoptosis induced by serum deprivation, hydrogen peroxide, nitric oxide, tumor necrosis factor-alpha, and anti-****"Fas"***** *****monoclonal***** *****"antibody"*****. In addition, *****reduced***** levels of TAL resulted in increased glucose-6-phosphate dehydrogenase and 6-phosphogluconate dehydrogenase activities and increased GSH levels with inhibition of apoptosis in all five model systems. The effect of TAL expression on susceptibility to apoptosis through regulating the PPP and GSH production is consistent with an involvement of ROIs in each pathway tested. Production of ROIs in Fas-mediated cell death was further substantiated by measurement of intracellular ROI production with oxidation-sensitive fluorescent probes, by the protective effects of GSH precursor, N-acetyl cysteine, free radical spin traps 5,5-dimethyl-1-pyrroline-1-oxide and 3,3,5,5-tetramethyl-1-pyrroline-1-oxide, the antioxidants dexteroxamine, nordihydroguaiaretic acid and Amval, and by the enhancing effects of GSH depletion with buthione sulfoximine. The results provide definitive evidence that TAL has a role in regulating the balance between the two branches of PPP and its overall output as measured by GSH production and thus influences sensitivity to cell death signals.

L6 ANSWER 15 OF 18 MEDLINE DUPLICATE 14
ACCESSION NUMBER: 97180151 MEDLINE
DOCUMENT NUMBER: 97180151 TITLE:
Involvement of Fas-mediated apoptosis in the inhibitory effects of interferon-gamma in chronic myelogenous leukemia.

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L23 2,L3 AND L7 AND L11
L23

TOTAL FOR ALL FILES
L24 52 L4 AND L8 AND L12
L24

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Akio Adachi, Tokushima, Japan
Toshiro Asano, Mishima, Japan
ASSIGNEE: Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan (foreign corp.)
ASSIGNEE: (corp.)

APPL-NO: 08/815,669
DATE FILED: Mar. 10, 1997

ART-UNIT: 125

PRIME-XMR:

Jerome D. Goldberg

LEGAL-REP:

Young & Thompson

US PAT NO: 5,747,245 [IMAGE AVAILABLE]

L24: 1 of 52

DATE ISSUED: May 5, 1998

TITLE: Nucleic acids encoding **Fas** associated proteins and screening assays using same

INVENTOR: John C. Reed, Carlsbad, CA

Takashi Sato, San Diego, CA

ASSIGNEE: La Jolla Cancer Research Foundation, La Jolla, CA (U.S. corp.)

APPL-NO: 08/259,514
DATE FILED: Jun 14, 1994

ART-UNIT: 187

PRIME-XMR:

Stephanie W. Zitomer

ASST-XMR:

Diane Rees

US PAT NO: 5,747,245 [IMAGE AVAILABLE]

L24: 1 of 52

ABSTRACT: The present invention provides mammalian protein tyrosine phosphatases, human PTP-BAS type 5a, human PTP-BAS type 5b, mouse PTP-BAS type 5b, each of which is a **Fas**-associated protein (FAP), nucleic acid molecules encoding a PTP-BAS type 4 or a PTP-BAS type 5 and antibodies specific for a PTP-BAS type 4 or for a PTP-BAS type 5. The invention also provides methods for identifying FAPs, which can associate with **Fas** and can modulate apoptosis. The invention also provides screening assays for identifying an agent that can effectively alter the association of a FAP with **Fas** and, therefore, can increase or decrease the level of apoptosis in a cell. The invention further provides methods of modulating apoptosis in a cell by introducing into the cell a nucleic acid molecule encoding a PTP-BAS or an antisense nucleotide sequence, which is complementary to a portion of a nucleic acid molecule encoding a PTP-BAS. The invention also provides a method of using a reagent that can specifically bind to a FAP to diagnose a pathology that is characterized by an increased or decreased level of apoptosis in a cell. The invention also provides methods of modulating apoptosis in a cell by contacting the cell with an agent that effectively alters the association of a FAP and **Fas** in a cell or alters the activity of a FAP in a cell.

US PAT NO: 5,733,904 [IMAGE AVAILABLE]

L24: 3 of 52

ABSTRACT: A method for prevention and treatment of viral infectious diseases using screening assays using same

INVENTOR: John C. Reed, Carlsbad, CA

Takashi Sato, San Diego, CA

ASSIGNEE: Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan (foreign corp.)
ASSIGNEE: (corp.)

APPL-NO: 08/815,669
DATE FILED: Mar. 10, 1997

ART-UNIT: 125

PRIME-XMR:

Jerome D. Goldberg

ASST-XMR:

Jill D. Schmuck

LEGAL-REP:

Nancy A. Olesi, Ron Levy, Steven M. Ode

US PAT NO: 5,714,667 [IMAGE AVAILABLE]

L24: 6 of 52

ABSTRACT: A method for prevention and treatment of viral infectious diseases using screening assays using same

INVENTOR: John C. Reed, Carlsbad, CA

Takashi Sato, San Diego, CA

ASSIGNEE: Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan (foreign corp.)
ASSIGNEE: (corp.)

APPL-NO: 08/418,898
DATE FILED: Apr. 7, 1995

ART-UNIT: 186

PRIME-XMR:

David Saunders

ASST-XMR:

Lyon & Lyon LLP

LEGAL-REP:

Andrea R. Schiavone, Winchester, MA

ASSIGNEE: Genetics Institute, Inc., Cambridge, MA (U.S. corp.)
ASSIGNEE: James Graham, Somerville, MA
ASSIGNEE: Jennifer Chen, Chestnut Hill, MA
ASSIGNEE: Andrea R. Schiavone, Winchester, MA

APPL-NO: 08/659,551
DATE FILED: Aug. 15, 1996

ART-UNIT: 182

PRIME-XMR:

Stephen Walsh

ASST-XMR:

Mukta Ranjan

LEGAL-REP:

Scott A. Brown, Suzanne A. Spangler, Thomas J. DesRosier

US PAT NO: 5,713,738 [IMAGE AVAILABLE]

L24: 4 of 52

ABSTRACT: The present invention relates to immunological receptors and ligands, and more particularly to monoclonal receptors raised to peptides whose amino acid residue sequences correspond to sequences of retroviral ligands. The receptors are used to assay body samples from a host to indicate exposure of the host to a carcinogen.

INVENTOR: Mark Anderson, Bainbridge Island, WA

Richard J. Armitage, Bainbridge Island, WA

Jeffrey I. Cohen, Silver Spring, MD

Michael R. Comteau, Seattle, WA

Lindsey M. Hart-Fletcher, Kansas City, MO

Malanis K. Springs, Seattle, WA

ASSIGNEE: Immunex Corporation, Seattle, WA (U.S. corp.)

ASSIGNEE: (corp.)

APPL-NO: 08/430,653
DATE FILED: Apr. 28, 1995

ART-UNIT: 185

PRIME-XMR:

Marin C. Knodel

ASST-XMR:

Ali R. Salimi

LEGAL-REP:

Patricia Anne Perkins

US PAT NO: 5,726,286 [IMAGE AVAILABLE]

L24: 2 of 52

ABSTRACT: Isolated viral proteins and pharmaceutical compositions made therefrom, are disclosed which are capable of binding to a beta chain of a Class II Major Histocompatibility Complex antigen, thereby functioning to inhibit** an antigen-specific response. The viral proteins also have superantigen-like activity, and **inhibit** EBV infection.

INVENTOR: John Ulm

PRIME-XMR:

Ginger R. Drager

ASST-XMR:

LEGAL-REP:

US PAT NO: 5,741,667 [IMAGE AVAILABLE]

L24: 3 of 52

ABSTRACT: The invention concerns new tumor necrosis factor receptor associated factors, designated TRAFs. The new factors are capable of specific association with the intracellular domain of the type 2 TNF receptor (TNF-R2) and CD40 and are involved in the mediation of TNF and CD40 ligand biological activities.

INVENTOR: Maruji Sato, San Diego, CA

PRIME-XMR:

Stephanie W. Zitomer

ASST-XMR:

Diane Rees

LEGAL-REP:

US PAT NO: 5,733,904 [IMAGE AVAILABLE]

L24: 3 of 52

ABSTRACT: The invention concerns new tumor necrosis factor receptor associated factors, designated TRAFs. The new factors are capable of specific association with the intracellular domain of the type 2 TNF receptor (TNF-R2) and CD40 and are involved in the mediation of TNF and CD40 ligand biological activities.

INVENTOR: Maruji Sato, San Diego, CA

PRIME-XMR:

Stephanie W. Zitomer

ASST-XMR:

Diane Rees

LEGAL-REP:

US PAT NO: 5,714,667 [IMAGE AVAILABLE]

L24: 4 of 52

ABSTRACT: The invention concerns new tumor necrosis factor receptor associated factors, designated TRAFs. The new factors are capable of specific association with the intracellular domain of the type 2 TNF receptor (TNF-R2) and CD40 and are involved in the mediation of TNF and CD40 ligand biological activities.

INVENTOR: Maruji Sato, San Diego, CA

PRIME-XMR:

Stephanie W. Zitomer

ASST-XMR:

Diane Rees

LEGAL-REP:

US PAT NO: 5,714,667 [IMAGE AVAILABLE]

L24: 5 of 52

ABSTRACT: The invention concerns new tumor necrosis factor receptor associated factors, designated TRAFs. The new factors are capable of specific association with the intracellular domain of the type 2 TNF receptor (TNF-R2) and CD40 and are involved in the mediation of TNF and CD40 ligand biological activities.

INVENTOR: Maruji Sato, San Diego, CA

PRIME-XMR:

Stephanie W. Zitomer

ASST-XMR:

Diane Rees

LEGAL-REP:

US PAT NO: 5,714,667 [IMAGE AVAILABLE]

L24: 6 of 52

ABSTRACT: The invention concerns new tumor necrosis factor receptor associated factors, designated TRAFs. The new factors are capable of specific association with the intracellular domain of the type 2 TNF receptor (TNF-R2) and CD40 and are involved in the mediation of TNF and CD40 ligand biological activities.

INVENTOR: Maruji Sato, San Diego, CA

PRIME-XMR:

Stephanie W. Zitomer

ASST-XMR:

Diane Rees

LEGAL-REP:

US PAT NO: 5,714,667 [IMAGE AVAILABLE]

L24: 7 of 52

ABSTRACT: Disclosed is a mouse in which expression of the gene encoding the CTLA-4 receptor is **suppressed**. Also disclosed is a nucleic acid construct useful in preparing such a mouse, and a cell line containing such construct.

INVENTOR: Tak Wah Mak, Toronto, Canada

PRIME-XMR:

Tak Wah Mak

ASST-XMR:

LEGAL-REP:

US PAT NO: 5,714,667 [IMAGE AVAILABLE]

L24: 8 of 52

US PAT NO: 5,705,380 [IMAGE AVAILABLE] L24: 9 of 52
DATE ISSUED: Jan. 6, 1998
TITLE: Identification of gene encoding TULP2, a retina specific protein

INVENTOR: Michael North, San Diego, CA
Patsy Nishina, Bar Harbor, ME
Juergen Nagger, Bar Harbor, ME

ASSIGNEE: Sequana Therapeutics, Inc., La Jolla, CA (U.S. corp.)
Jackson Lab, Bar Harbor, ME (U.S. corp.)

APPL-NO: 08/706,392
DATE FILED: Sep. 4, 1996

ART-UNIT: 187

PRIME-XMR: W. Gary Jones

ASST-EXMR: Debra Showmaker

LEGAL-REP: Pamela Bozicewicz & Reed, LLP, Sherwood, Ph. D.

US PAT NO: 5,705,380 [IMAGE AVAILABLE] L24: 9 of 52

ABSTRACT:
The gene responsible for an autosomal dominant cone-rod retinal dystrophy is identified, TULP2. The genes are used to produce the encoded protein, TULP2, for compositions that modulate the expression or function of TULP2 protein, and in studying associated physiological pathways.

US PAT NO: 5,705,380 [IMAGE AVAILABLE] L24: 9 of 52

ABSTRACT:
The gene responsible for an autosomal dominant cone-rod retinal dystrophy is identified, TULP2. The genes are used to produce the encoded protein, TULP2, for compositions that modulate the expression or function of TULP2 protein, and in studying associated physiological pathways.

US PAT NO: 5,705,380 [IMAGE AVAILABLE] L24: 9 of 52

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US PAT NO: 5,705,380 [IMAGE AVAILABLE] L24: 9 of 52

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US PAT NO: 5,705,380 [IMAGE AVAILABLE] L24: 9 of 52

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US PAT NO: 5,705,380 [IMAGE AVAILABLE] L24: 9 of 52

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US PAT NO: 5,705,380 [IMAGE AVAILABLE] L24: 9 of 52

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US PAT NO: 5,705,380 [IMAGE AVAILABLE] L24: 9 of 52

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US PAT NO: 5,705,380 [IMAGE AVAILABLE] L24: 9 of 52

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US PAT NO: 5,705,380 [IMAGE AVAILABLE] L24: 9 of 52

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US PAT NO: 5,705,380 [IMAGE AVAILABLE] L24: 9 of 52

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US PAT NO: 5,705,380 [IMAGE AVAILABLE] L24: 9 of 52

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US PAT NO: 5,705,380 [IMAGE AVAILABLE] L24: 9 of 52

ABSTRACT:
A membrane protein related to human programmed cell death (PD-1) and DNA encoding the said protein is provided. PD-1 protein may be useful for the treatment of various infections, immunological depression or acceleration, or tumors etc.

US PAT NO: 5,686,398 [IMAGE AVAILABLE] L24: 13 of 52
DATE ISSUED: Nov. 11, 1997
TITLE: Tissue specific viral vectors

INVENTOR: Daniel Robert Henderson, Palo Alto, CA
Eric Rudolph Schmit, Cupertino, CA
ASSIGNEE: Calydon, Inc., Menlo Park, CA (U.S. corp.)

APPL-NO: 08/495,034
DATE FILED: Jun. 27, 1995

ART-UNIT: 184

PRIME-XMR: Jacqueline M. Stone

ASST-EXMR: Andrew K. Milne

LEGAL-REP: Jonathan W. Ulrich, Dallas, TX

US PAT NO: 5,686,398 [IMAGE AVAILABLE] L24: 13 of 52

ABSTRACT:
Host cell specific adenovirus vehicles are provided for transfecting target host cells. By providing for transcriptional initiating regulation dependent upon transcription factors that are only active in specific, limited cell types, virus replication will be restricted to the target cells. The modified adenovirus may be used as a vehicle for introducing new genetic capability, particularly associated with cytotoxicity for treating neoplasia.

US PAT NO: 5,686,398 [IMAGE AVAILABLE] L24: 13 of 52

ABSTRACT:
The present invention provides methods for detecting an interaction among proteins involved in regulating cell death. The invention also provides a drug screening assay useful for identifying agents that alter an interaction among proteins involved in controlling cell death. The invention further provides a method for identifying novel proteins that are involved in a cell death pathway.

US PAT NO: 5,686,398 [IMAGE AVAILABLE] L24: 13 of 52

ABSTRACT:
The gene responsible for the autosomal recessive retinal degenerative disease RP 14 is identified, TULP1. The genes are used to produce the encoded protein, in screening for compositions that modulate the expression or function of TULP1 protein, and in studying associated physiological pathways. The DNA is further used as a diagnostic for genetic predisposition to retinal degeneration.

US PAT NO: 5,686,398 [IMAGE AVAILABLE] L24: 13 of 52

ABSTRACT:
The anti-tumor activity of a mixture of anti-CD22 and anti-CD19 immunotoxins is shown to be significantly enhanced in SCID/Daudi mice with disseminated human Daudi lymphoma. Unexpectedly identical enhancement was observed employing a combination of the anti-CD22 immunotoxin with unconjugated anti-CD19 antibodies. Thus combinations of an anti-CD22 immunotoxin and an anti-CD19 immunotoxin or antibody act synergistically and provide advantageous compositions and methods for immunotherapeutic treatment of various diseases including cancer and autoimmune disorders. Also disclosed is data indicating that certain anti-CD19 antibodies alone **inhibit** proliferation of CD19-positive cells by inducing cell cycle arrest.

US PAT NO: 5,686,398 [IMAGE AVAILABLE] L24: 13 of 52

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US PAT NO: 5,686,398 [IMAGE AVAILABLE] L24: 13 of 52

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US PAT NO: 5,686,398 [IMAGE AVAILABLE] L24: 13 of 52

ABSTRACT:
The anti-tumor activity of a mixture of anti-CD22 and anti-CD19 immunotoxins is shown to be significantly enhanced in SCID/Daudi mice with disseminated human Daudi lymphoma. Unexpectedly identical enhancement was observed employing a combination of the anti-CD22 immunotoxin with unconjugated anti-CD19 antibodies. Thus combinations of an anti-CD22 immunotoxin and an anti-CD19 immunotoxin or antibody act synergistically and provide advantageous compositions and methods for immunotherapeutic treatment of various diseases including cancer and autoimmune disorders. Also disclosed is data indicating that certain anti-CD19 antibodies alone **inhibit** proliferation of CD19-positive cells by inducing cell cycle arrest.

US PAT NO: 5,686,398 [IMAGE AVAILABLE] L24: 13 of 52

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US PAT NO: 5,686,398 [IMAGE AVAILABLE] L24: 13 of 52

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US PAT NO: 5,686,398 [IMAGE AVAILABLE] L24: 13 of 52

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US PAT NO: 5,686,398 [IMAGE AVAILABLE] L24: 13 of 52

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US PAT NO: 5,686,398 [IMAGE AVAILABLE] L24: 13 of 52

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US PAT NO: 5,686,398 [IMAGE AVAILABLE] L24: 13 of 52

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US PAT NO: 5,686,398 [IMAGE AVAILABLE] L24: 13 of 52

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US PAT NO: 5,686,398 [IMAGE AVAILABLE] L24: 13 of 52

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US PAT NO: 5,684,136 [IMAGE AVAILABLE] L24: 15 of 52
DATE ISSUED: Nov. 11, 1997
TITLE: Epitope-specific **monoclonal** **umbiobodies** and immunotoxins and uses thereof

INVENTOR: Ellen S. Viets, Dallas, TX
Richard H. Scheidemann, Carrollton, TX
ASSIGNEE: Board of Regents, The University of Texas, Austin, TX
(U.S. corp.)

APPL-NO: 08/202,942
DATE FILED: Feb. 22, 1994

ART-UNIT: 186

PRIME-XMR: Toni R. Schinner

LEGAL-REP: Arnold White & Durkee

US PAT NO: 5,684,136 [IMAGE AVAILABLE] L24: 15 of 52

ABSTRACT:
The invention relates to **monoclonal** **umbiobodies** and parts thereof which bind preferentially to active human platelets, to the nucleotide sequence and amino-acid sequence of the heavy and light chain of Mab BW 2128 and to an antigen associated with the thrombospondin.

US PAT NO: 5,684,136 [IMAGE AVAILABLE] L24: 15 of 52

US PAT NO: 5,684,136 [IMAGE AVAILABLE] L24: 17 of 52

ABSTRACT:

The invention concerns a method for activating receptors selected from receptor tyrosine kinases, cytokine receptors and members of the nerve growth factor receptor superfamily. A conjugate comprising the direct fusion of at least two ligands capable of binding to the receptor(s) to be activated is contacted with the receptors, whereby the ligands bind their respective receptors inducing receptor oligomerization.

US PAT NO: 5,675,960 [IMAGE AVAILABLE]

L24: 18 of 52

DATE ISSUED: Oct. 7, 1997

TITLE: Transgenic arthritic mice expressing a T-cell receptor

transgene

INVENTOR: Christophe O. Benoit, Strasbourg, France

Diane J. Manis, Strasbourg, France

Valerie Koucky, Denver, CO

ASSIGNEE: Institut National de la Santé et de la Recherche Médicale,

Paris, France (foreign corp.)

Centre National de la Recherche Scientifique, Paris,

France (foreign govt.)

Université Louis Pasteur, Strasbourg I, Paris, France

(foreign corp.)

E.R. Squibb & Sons, Inc., Princeton, NJ (U.S. corp.)

P/L-NO: 08246-242

DATE FILED: May 19, 1994

ART-UNIT: 184

PRIM-EXMR: Deborah Crouch

LEGAL-REP: Stern, Kessler, Goldstein & Fox, PLLC.

US PAT NO: 5,675,960 [IMAGE AVAILABLE]

L24: 18 of 52

DATE ISSUED: Oct. 7, 1997

TITLE: Method of preventing or treating disease characterized by

neoplastic cells expressing CD40

INVENTOR: Richard J. Armitage, Bainbridge Island, WA

William C. Fanslow, III, Federal Way, WA

Dan L. Longo, Kensington, MD

William J. Murphy, Frederick, MD

ASSIGNEE: Immunex Corporation, Seattle, WA (U.S. corp.)

The United States of America as represented by the

Department of Health and Human Services, Washington, DC

(U.S. govt.)

APPL-NO: 087360-923

DATE FILED: Dec. 21, 1994

ART-UNIT: 186

PRIM-EXMR: Lila Fasce

ASST-EXMR: Philip Gambel

LEGAL-REP: Patricia Aune Perkins

US PAT NO: 5,674,492 [IMAGE AVAILABLE]

L24: 20 of 52

DATE ISSUED: Oct. 7, 1997

TITLE: Method of preventing or treating disease characterized by

neoplastic cells expressing CD40

INVENTOR: Richard J. Armitage, Bainbridge Island, WA

William C. Fanslow, III, Federal Way, WA

Dan L. Longo, Kensington, MD

William J. Murphy, Frederick, MD

ASSIGNEE: Immunex Corporation, Seattle, WA (U.S. corp.)

The United States of America as represented by the

Department of Health and Human Services, Washington, DC

(U.S. govt.)

APPL-NO: 087360-923

DATE FILED: Dec. 21, 1994

ART-UNIT: 186

PRIM-EXMR: Lila Fasce

ASST-EXMR: Philip Gambel

LEGAL-REP: Patricia Aune Perkins

US PAT NO: 5,670,149 [IMAGE AVAILABLE]

L24: 22 of 52

DATE ISSUED: Sep. 9, 1997

TITLE: Cancer related antigen

INVENTOR: Francis P. Kubja, Lutherville, MD

ASSIGNEE: John Hopkins University, Baltimore, MD (U.S. corp.)

APPL-NO: 08469,005

DATE FILED: Jun. 5, 1995

ART-UNIT: 189

PRIM-EXMR: Jeffrey C. Elliott

ASST-EXMR: Baker & Botts, L.L.P.

US PAT NO: 5,665,374 [IMAGE AVAILABLE]

L24: 23 of 52

DATE ISSUED: Sep. 9, 1997

TITLE: Cancer related antigen

INVENTOR: Francis P. Kubja, Lutherville, MD

ASSIGNEE: John Hopkins University, Baltimore, MD (U.S. corp.)

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APPL-NO: 08469,005

DATE FILED: Jun. 5, 1995

ART-UNIT: 189

PRIM-EXMR: Jeffrey C. Elliott

ASST-EXMR: Baker & Botts, L.L.P.

US PAT NO: 5,661,004 [IMAGE AVAILABLE]

L24: 24 of 52

DATE ISSUED: Aug. 26, 1997

TITLE: Lymphotoxin- α , lymphotoxin- β , complexes, pharmaceutical preparations and therapeutic uses thereof

INVENTOR: Jeffrey Browning, Brookline, MA

ASSIGNEE: Biogen, Inc., Cambridge, MA (U.S. corp.)

APPL-NO: 08484,272

DATE FILED: Jun. 7, 1995

ART-UNIT: 189

PRIM-EXMR: George C. Elliott

ASST-EXMR: Amy J. Nelson

LEGAL-REP: Kerry A. Flynn

US PAT NO: 5,661,004 [IMAGE AVAILABLE]

L24: 24 of 52

DATE ISSUED: Sep. 22, 1997

TITLE: Lymphotoxin- α , lymphotoxin- β , complexes, pharmaceutical preparations and therapeutic uses thereof

INVENTOR: Jeffrey Browning, Brookline, MA

ASSIGNEE: Biogen, Inc., Cambridge, MA (U.S. corp.)

APPL-NO: 08484,272

DATE FILED: Jun. 7, 1995

ART-UNIT: 189

PRIM-EXMR: George C. Elliott

ASST-EXMR: Amy J. Nelson

LEGAL-REP: Kerry A. Flynn

US PAT NO: 5,670,149 [IMAGE AVAILABLE]

L24: 22 of 52

DATE ISSUED: Sep. 22, 1997

TITLE: Lymphotoxin- α , lymphocyte membrane type

INVENTOR: James Ketter

ASSIGNEE: Item Yuvel

APPL-NO: 08476,439

DATE FILED: Jun. 6, 1995

ART-UNIT: 183

PRIM-EXMR: James Ketter

ASST-EXMR: Item Yuvel

LEGAL-REP: Kerry A. Flynn

US PAT NO: 5,670,149 [IMAGE AVAILABLE]

L24: 22 of 52

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APPL-NO: 08476,439

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ART-UNIT: 183

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LEGAL-REP: Kerry A. Flynn

US PAT NO: 5,670,149 [IMAGE AVAILABLE]

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US PAT NO: 5,670,149 [IMAGE AVAILABLE]

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US PAT NO: 5,670,149 [IMAGE AVAILABLE]

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US PAT NO: 5,670,149 [IMAGE AVAILABLE]

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US PAT NO: 5,670,149 [IMAGE AVAILABLE]

L24: 22 of 52

DATE ISSUED: Sep. 22, 1997

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US PAT NO: 5,670,149 [IMAGE AVAILABLE]

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DATE ISSUED: Sep. 22, 1997

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APPL-NO: 08476,439

DATE FILED: Jun. 6, 1995

ART-UNIT: 183

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LEGAL-REP: Kerry A. Flynn

US PAT NO: 5,670,149 [IMAGE AVAILABLE]

L24: 22 of 52

DATE ISSUED: Sep. 22, 1997

TITLE: Lymphotoxin- α , lymphocyte membrane type

INVENTOR: James Ketter

ASSIGNEE: Item Yuvel

APPL-NO: 08476,439

DATE FILED: Jun. 6, 1995

ART-UNIT: 183

PRIM-EXMR: James Ketter

ASST-EXMR: Item Yuvel

LEGAL-REP: Kerry A. Flynn

US PAT NO: 5,670,149 [IMAGE AVAILABLE]

L24: 22 of 52

DATE ISSUED: Sep. 22, 1997

TITLE: Lymphotoxin- α , lymphocyte membrane type

including photol ester (PMA) stimulated T cell hybridsoma II-23.D7 cells. This invention also relates to complexes formed between lymphotixin- β and other peptides such as lymphotixin- α . These complexes comprising multiple subunits of lymphotixin- β . These proteins and complexes are useful in holding LTF- α , formed within the cell on the cell surface where the LTF- α /LTF- β complex may act as an inflammation regulating agent, a tumor growth **inhibiting** agent, a T cell **inhibiting** agent, a T cell activating agent, an autoimmune disease regulating agent, or an HIV **inhibiting** agent. Furthermore, the antiinflamatory activity of the LTF- α /LTF- β complex may be transferred with tumor cells by tumor infiltrating lymphocytes (TILs)

US PAT NO: 5,658,912 [IMAGE AVAILABLE] L24: 25 of 52
DATE ISSUED: Aug. 19, 1997
TITLE: Apoptosis regulating composition
INVENTOR: Satou Natai, Tokushima-ken, Japan
Koutoku Aihara, Tokushima-ken, Japan
Hidemichi Tomiaga, Tokushima-ken, Japan
Michitaka Andachi, Tokasaki, Japan
Masakazu Andachi, Tokasaki, Japan
Hiroyuki Ichikawa, Tokushima, Japan
Seiji Akamatsu, Naruto, Japan
Fumio Saito, Takasaki, Japan

ASSIGNEE: Otsuka Pharmaceutical Co., Ltd, Tokyo, Japan (foreign corp.)
APPL-NO: 08/469,922
DATE FILED: Jun. 6, 1995
ART-UNIT: 125
PRIM-EXNR: Russell Travers
ASST-EXNR: Suguru, Mion, Zim, Macpeak & Seas
LEGAL-REP: Suguru, Mion, Zim, Macpeak & Seas
US PAT NO: 5,658,912 [IMAGE AVAILABLE] L24: 25 of 52
ABSTRACT:
An object of the invention is to provide an apoptosis regulating composition. According to the invention, an apoptosis regulating composition is provided which comprises, as an active ingredient, at least one carbostyryl derivatives of general formula (1) #5STR1## and salts thereof.

US PAT NO: 5,658,916 [IMAGE AVAILABLE] L24: 25 of 52
DATE ISSUED: Jun. 19, 1997
TITLE: Apoptosis regulating composition
INVENTOR: Satou Natai, Tokushima-ken, Japan
Koutoku Aihara, Tokushima-ken, Japan
Hidemichi Tomiaga, Tokushima-ken, Japan
Michitaka Andachi, Tokasaki, Japan
Masakazu Andachi, Tokasaki, Japan
Hiroyuki Ichikawa, Tokushima, Japan
Seiji Akamatsu, Naruto, Japan
Fumio Saito, Takasaki, Japan

ASSIGNEE: Otsuka Pharmaceutical Co., Ltd, Tokyo, Japan (foreign corp.)
APPL-NO: 08/469,922
DATE FILED: Jun. 6, 1995
ART-UNIT: 125
PRIM-EXNR: Russell Travers
ASST-EXNR: Suguru, Mion, Zim, Macpeak & Seas
LEGAL-REP: Suguru, Mion, Zim, Macpeak & Seas
US PAT NO: 5,658,912 [IMAGE AVAILABLE] L24: 25 of 52
ABSTRACT:
An object of the invention is to provide an apoptosis regulating composition. According to the invention, an apoptosis regulating composition is provided which comprises, as an active ingredient, at least one carbostyryl derivatives of general formula (1) #5STR1## and salts thereof.

INVENTOR: Janice Au-Young, Berkeley, CA
Philip R. Hawkins, Mountain View, CA
Jennifer L. Hillman, San Jose, CA
ASSIGNEE: Incyte Pharmaceuticals, Inc, Palo Alto, CA (U.S. corp.)
APPL-NO: 08/666,798
DATE FILED: Jun. 18, 1996
ART-UNIT: 189
PRIM-EXNR: George C. Elliott
ASST-EXNR: Amy J. Nelson
LEGAL-REP: Lucy J. Incyte Pharmaceuticals, Inc, Billings

US PAT NO: 5,648,238 [IMAGE AVAILABLE] L24: 27 of 52
DATE ISSUED: May 13, 1997
TITLE: Peptide related to human programmed cell death and DNA encoding it
INVENTOR: Tsukulu Honjo, Kyoto, Japan
Yasumasa Ishida, Newton, MA
Takashi Shimohira, Kyoto, Japan

ASSIGNEE: Otsuka Pharmaceutical Co., Ltd, Osaka, Japan (foreign corp.)
APPL-NO: 08/396,650
DATE FILED: Mar. 1, 1995
ART-UNIT: 184
PRIM-EXNR: Robert A. Wax
ASST-EXNR: G. E. Bugaisky
LEGAL-REP: Suguru, Mion, Zim, Macpeak & Seas
US PAT NO: 5,637,465 [IMAGE AVAILABLE] L24: 28 of 52
DATE ISSUED: Jun. 10, 1997
TITLE: Method for the detection of a programmed or induced cell death of eukaryotic cells
INVENTOR: Bernhard Trauth, Mannheim, Federal Republic of Germany
ASSIGNEE: Boehringer Mannheim GmbH, Mannheim, Federal Republic of Germany (foreign corp.)
APPL-NO: 08/245,583
DATE FILED: May 18, 1994
ART-UNIT: 186
PRIM-EXNR: Tonio R. Scheiner
ASST-EXNR: Yvonne Eyer
LEGAL-REP: Feltz & Lynch

US PAT NO: 5,637,465 [IMAGE AVAILABLE] L24: 28 of 52
ABSTRACT:
The invention concerns a method for the detection of a programmed or induced cell death of eukaryotic cells as well as a suitable test kit for this method of detection.

cell. The invention also provides methods of modulating apoptosis in a cell by contacting the cell with an agent that effectively alters the association of FAP and **Fas** in a cell or alters the activity of a FAP in a cell.

US PAT NO: 5,629,204 [IMAGE AVAILABLE] L24: 30 of 52
DATE ISSUED: May 13, 1997
TITLE: Peptide related to human programmed cell death and DNA encoding it
INVENTOR: Tsukulu Honjo, Kyoto, Japan
Yasumasa Ishida, Newton, MA
Takashi Shimohira, Kyoto, Japan

ASSIGNEE: Otsuka Pharmaceutical Co., Ltd, Osaka, Japan (foreign corp.)
APPL-NO: 08/396,650
DATE FILED: Mar. 1, 1995
ART-UNIT: 184
PRIM-EXNR: Robert A. Wax
ASST-EXNR: G. E. Bugaisky
LEGAL-REP: Suguru, Mion, Zim, Macpeak & Seas
US PAT NO: 5,629,204 [IMAGE AVAILABLE] L24: 30 of 52
ABSTRACT:
A membrane protein related to human programmed cell death (PD-1) and DNA encoding the said protein is provided. PD-1 protein may be useful for the treatment of various infections, immunological depression or acceleration, or tumors etc.

The present invention provides a panel of **monoclonal** **antibodies** and binding proteins which specifically bind to human **Fas** antigen. Some of the antibodies and binding proteins are capable of stimulating T cell proliferation, **inhibiting** binding of anti-**Fas**/CH-11 **monoclonal** **antibody** to cells expressing **Fas** antigen, blocking anti-**Fas**/CH-11 **monoclonal** **antibody** mediated lysis of cells, and blocking **Fas** ligand-mediated lysis of cells. The invention also provides for therapeutic compositions comprising the **monoclonal** **antibodies**.

US PAT NO: 5,620,839 [IMAGE AVAILABLE] L24: 31 of 52
ABSTRACT:
The present invention provides a panel of **monoclonal** **antibodies** and binding proteins which specifically bind to human **Fas** antigen. Some of the antibodies and binding proteins are capable of stimulating T cell proliferation, **inhibiting** binding of anti-**Fas**/CH-11 **monoclonal** **antibody** to cells expressing **Fas** antigen, blocking anti-**Fas**/CH-11 **monoclonal** **antibody** mediated lysis of cells, and blocking **Fas** ligand-mediated lysis of cells. The invention also provides for therapeutic compositions comprising the **monoclonal** **antibodies**.

US PAT NO: 5,620,839 [IMAGE AVAILABLE] L24: 31 of 52
ABSTRACT:
The present invention provides mammalian protein tyrosine phosphatases, human PTP-BAS type 4, human PTP-BAS type 5a and mouse PTP-BAS type 5b, each of which is a **Fas**-associated protein (FAP), nucleic acid molecules encoding a PTP-BAS type 4 or a PTP-BAS type 5 and antibodies specific for a PTP-BAS type 4 or a PTP-BAS type 5. The invention also provides methods for identifying FAP's, which can associate with **Fas** and can modulate apoptosis. The invention also provides screening assays for identifying an agent that can effectively alter the association of a FAP with **Fas** and, therefore, can increase or decrease the level of apoptosis in a cell. The invention further provides methods of modulating apoptosis in a cell by introducing into the cell a nucleic acid molecule encoding a PTP-BAS or fragment of a PTP-BAS or an antisense nucleotide sequence, which is complementary to a portion of a nucleic acid molecule encoding a PTP-BAS. The invention also provides a method of using a reagent that can specifically bind to a FAP to diagnose a pathology that is characterized by an increased or decreased level of apoptosis in a

US PAT NO: 5,632,994 [IMAGE AVAILABLE] L24: 29 of 52
ABSTRACT:
The present invention provides mammalian protein tyrosine phosphatases, human PTP-BAS type 4, human PTP-BAS type 5a and mouse PTP-BAS type 5b, each of which is a **Fas**-associated protein (FAP), nucleic acid molecules encoding a PTP-BAS type 4 or a PTP-BAS type 5 and antibodies specific for a PTP-BAS type 4 or a PTP-BAS type 5. The invention also provides methods for identifying FAP's, which can associate with **Fas** and can modulate apoptosis. The invention also provides screening assays for identifying an agent that can effectively alter the association of a FAP with **Fas** and, therefore, can increase or decrease the level of apoptosis in a cell. The invention further provides methods of modulating apoptosis in a cell by introducing into the cell a nucleic acid molecule encoding a PTP-BAS or fragment of a PTP-BAS or an antisense nucleotide sequence, which is complementary to a portion of a nucleic acid molecule encoding a PTP-BAS. The invention also provides a method of using a reagent that can specifically bind to a FAP to diagnose a pathology that is characterized by an increased or decreased level of apoptosis in a

cell. The invention also provides methods of modulating apoptosis in a cell by contacting the cell with an agent that effectively alters the association of FAP and **Fas** in a cell or alters the activity of a FAP in a cell.

US PAT NO: 5,599,665 [IMAGE AVAILABLE] L24: 32 of 52
DATE ISSUED: Feb. 4, 1997
TITLE: *Pseudomonas aeruginosa* nucleic acids encoding exoenzyme S activity and use thereof in detecting *pseudomonas* aeruginosa infection
INVENTOR: Joseph T. Barberi, New Berlin, WI
Data W. Frank, West Allis, WI
ASSIGNEE: MCW Research Foundation, Milwaukee, WI (U.S. corp.)
APPL-NO: 08/171,259
DATE FILED: Dec. 21, 1993
ART-UNIT: 187
PRIM-EXNR: Kenneth R. Horlick
ASST-EXNR: Quarters & Brady
LEGAL-REP: Quarters & Brady

US PAT NO: 5,599,665 [IMAGE AVAILABLE] L24: 32 of 52
ABSTRACT:
A genetic construct containing a coding region for exoenzyme S activity

cell. The invention also provides methods of modulating apoptosis in a cell by contacting the cell with an agent that effectively alters the association of FAP and **Fas** in a cell or alters the activity of a FAP in a cell.

US PAT NO: 5,599,665 [IMAGE AVAILABLE] L24: 32 of 52
DATE ISSUED: Feb. 4, 1997
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APPL-NO: 08/171,259
DATE FILED: Dec. 21, 1993
ART-UNIT: 187
PRIM-EXNR: Kenneth R. Horlick
ASST-EXNR: Quarters & Brady
LEGAL-REP: Quarters & Brady

US PAT NO: 5,599,665 [IMAGE AVAILABLE] L24: 32 of 52
ABSTRACT:
A genetic construct containing a coding region for exoenzyme S activity

cell. The invention also provides methods of modulating apoptosis in a cell by contacting the cell with an agent that effectively alters the association of FAP and **Fas** in a cell or alters the activity of a FAP in a cell.

US PAT NO: 5,599,665 [IMAGE AVAILABLE] L24: 32 of 52
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APPL-NO: 08/171,259
DATE FILED: Dec. 21, 1993
ART-UNIT: 187
PRIM-EXNR: Kenneth R. Horlick
ASST-EXNR: Quarters & Brady
LEGAL-REP: Quarters & Brady

US PAT NO: 5,599,665 [IMAGE AVAILABLE] L24: 32 of 52
ABSTRACT:
A genetic construct containing a coding region for exoenzyme S activity

from *Pseudomonas aeruginosa* is disclosed. A essentially pure protein preparation of the 49 kDa form of exoenzyme S is also disclosed. The protein product of the genetic construct may be used to modify the RAS protein function in mammalian carcinomas, used as a vaccine, or used to diagnose *Pseudomonas aeruginosa* infection.

nucleic acids, vectors and cells comprising TRADD-encoding nucleic acids, and TRADD-specific binding reagents. These compositions find use in diagnostic and therapeutic methods for disease associated with undesirable cell growth, migration, differentiation and/or cytosine signal responsiveness and methods and compositions for identifying lead compounds and pharmacological agents.

PRIM-EXNR: Patricia R. Moody
US PAT NO: 5,510,255 [IMAGE AVAILABLE] L24: 38 of 52

ABSTRACT:

US PAT NO: 5,591,587 [IMAGE AVAILABLE] L24: 33 of 52
DATE ISSUED: Jun. 7, 1997
TITLE: Polypeptide-induced monoclonal receptors to protein ligands
INVENTOR: Henry L. Niman, Pittsburgh, PA
ASSIGNEE: The Scripps Research Institute, La Jolla, CA (U.S. corp.)
APPL-NO: 08/294,879
DATE FILED: Aug. 23, 1994
ART-UNIT: 183
PRIM-EXNR: Christine M. Nucker
ASST-EXNR: Jeffrey Stucker
LEGAL-REP: Lyon & Lyon
US PAT NO: 5,591,587 [IMAGE AVAILABLE] L24: 33 of 52

ABSTRACT:

US PAT NO: 5,583,160 [IMAGE AVAILABLE] L24: 34 of 52
DATE ISSUED: Dec. 10, 1996
TITLE: Methylsphingosine used to treat apoptosis
INVENTOR: Yasuaki Iguchi, Seattle, WA
ASSIGNEE: The Biopharm Institute, Seattle, WA (U.S. corp.)
APPL-NO: 08/357,306
DATE FILED: Dec. 14, 1994
ART-UNIT: 125
PRIM-EXNR: Theodore J. Chaires
LEGAL-REP: Sughrue, Mion, Zinn, Macpeak & Seas
US PAT NO: 5,583,160 [IMAGE AVAILABLE] L24: 34 of 52

US PAT NO: 5,583,160 [IMAGE AVAILABLE] L24: 34 of 52

ABSTRACT:

An object of the invention is to provide hepatitis therapy. According to the invention, an apoptosis regulating composition is provided which comprises, as an active ingredient, at least one carboxyl derivatives of general formula (1) $\#(STR1\#H and salts thereof.$

ABSTRACT:

US PAT NO: 5,583,863 [IMAGE AVAILABLE] L24: 37 of 52
DATE ISSUED: Jul. 23, 1996
TITLE: Expression system comprising mutant yeast strain and expression vector encoding synthetic signal peptide
INVENTOR: Virginia L. Price, Seattle, WA
ASSIGNEE: Immunex Corporation, Seattle, WA (U.S. corp.)
APPL-NO: 08/086,315
DATE FILED: Jul. 1, 1993
ART-UNIT: 185
PRIM-EXNR: Mindy Fleisher
ASST-EXNR: Philip W. Carter
LEGAL-REP: Kathryn A. Anderson
US PAT NO: 5,583,863 [IMAGE AVAILABLE] L24: 37 of 52

ABSTRACT:

US PAT NO: 5,583,863 [IMAGE AVAILABLE] L24: 37 of 52
DATE ISSUED: Oct. 8, 1996
TITLE: TNF receptor-associated intracellular signaling proteins and methods of use
INVENTOR: David V. Goeddel, South San Francisco, CA
ASSIGNEE: Tibotec, Inc., So, San Francisco, CA (U.S. corp.)
APPL-NO: 08/414,625
DATE FILED: Mar. 31, 1995
ART-UNIT: 182
PRIM-EXNR: John Ulm
LEGAL-REP: Riehr, Horbach, Test, Albritton & Herbert
US PAT NO: 5,583,863 [IMAGE AVAILABLE] L24: 37 of 52

ABSTRACT:

A novel strain of *Saccharomyces cerevisiae* is useful as a host cell in the production of recombinant proteins. The novel *S. cerevisiae* cells transformed with a recombinant expression vector encoding a desired heterologous protein, preferably fused to a suitable N-terminal signal peptide, are cultivated under condition that promote expression of the protein. Also provided are signal peptides derived by replacing the native signal peptide cleavage site of a type I interleukin-1 receptor signal peptide with the tripeptide *Ala-X-Ala*, wherein X represents an amino acid selected from Leu, Phe, and Gln. An expression system comprises a yeast host cell (preferably the novel *S. cerevisiae* strain) transformed with an expression vector comprising a promoter functional in yeast cells operably linked to DNA encoding a desired heterologous protein.

ABSTRACT:

US PAT NO: 5,583,863 [IMAGE AVAILABLE] L24: 37 of 52
DATE ISSUED: Oct. 8, 1996
TITLE: TNF receptor-associated intracellular signaling proteins and methods of use
INVENTOR: David V. Goeddel, South San Francisco, CA
ASSIGNEE: Tibotec, Inc., So, San Francisco, CA (U.S. corp.)
APPL-NO: 08/414,625
DATE FILED: Mar. 31, 1995
ART-UNIT: 182
PRIM-EXNR: John Ulm
LEGAL-REP: Riehr, Horbach, Test, Albritton & Herbert
US PAT NO: 5,583,863 [IMAGE AVAILABLE] L24: 37 of 52

ABSTRACT:

US PAT NO: 5,583,863 [IMAGE AVAILABLE] L24: 37 of 52
DATE ISSUED: Oct. 8, 1996
TITLE: TNF receptor-associated intracellular signaling proteins and methods of use
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APPL-NO: 08/414,625
DATE FILED: Mar. 31, 1995
ART-UNIT: 182
PRIM-EXNR: John Ulm
LEGAL-REP: Riehr, Horbach, Test, Albritton & Herbert
US PAT NO: 5,583,863 [IMAGE AVAILABLE] L24: 37 of 52

ABSTRACT:

A novel family of intracellular signaling proteins, exemplified by a Tumor Necrosis Factor Receptor-1 Associated Death Domain protein (TRADD), share a common TRADD sequence and include transducers of signals that modulate cell growth, differentiation and apoptosis. As such, the TRADD proteins, TRADD-encoding nucleic acids, and natural TRADD intracellular binding targets provide both important targets and mean for therapeutic intervention. In particular, the invention provides isolated TRADDs and TRADD fragments, nucleic acids encoding the subject TRADDs and TRADD fragments or capable of selectively hybridizing to such TRADD-encoding

PRIM-EXNR: Patricia R. Moody
US PAT NO: 5,510,255 [IMAGE AVAILABLE] L24: 38 of 52

ABSTRACT:

US PAT NO: 5,543,412 [IMAGE AVAILABLE] L24: 36 of 52
DATE ISSUED: Aug. 6, 1996
TITLE: Hepatitis treatment with carboxylic compounds
INVENTOR: Satoru Nakai, Tokushima-ken, Japan
Koutoku Aihara, Tokushima-ken, Japan
Hitomi Mori, Tokushima, Japan
Michiaki Tomimura, Tokushima-ken, Japan
Masakazu Aochi, Tokushima, Japan
Hiroyuki Ichikawa, Tokushima, Japan
Fumio Saito, Takasaki, Japan
Seiji Akamatsu, Naruto, Japan
ASSIGNEE: Otsuka Pharmaceutical Co., Ltd., Tokyo, Japan (foreign corp.)
APPL-NO: 08/465,893
DATE FILED: Jun. 6, 1995
ART-UNIT: 125
PRIM-EXNR: Russell Treavers
LEGAL-REP: Sughrue, Mion, Zinn, Macpeak & Seas
US PAT NO: 5,543,412 [IMAGE AVAILABLE] L24: 36 of 52

ABSTRACT:

An object of the invention is to provide hepatitis therapy. According to the invention, an apoptosis regulating composition is provided which comprises, as an active ingredient, at least one carboxyl derivatives of general formula (1) $\#(STR1\#H and salts thereof.$

ABSTRACT:

US PAT NO: 5,547,099 [IMAGE AVAILABLE] L24: 39 of 52
DATE ISSUED: Dec. 12, 1995
TITLE: Plant fatty acid syntheses
INVENTOR: Vic C. Knau, Winters, CA
ASSIGNEE: Colgate Inc., Davis, CA (U.S. corp.)
APPL-NO: 07/721,761
DATE FILED: Jun. 12, 1991
ART-UNIT: 183
PRIM-EXNR: Patricia R. Moody

ABSTRACT:

US PAT NO: 5,547,099 [IMAGE AVAILABLE] L24: 39 of 52
DATE ISSUED: Dec. 12, 1995
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INVENTOR: Vic C. Knau, Winters, CA
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ABSTRACT:

US PAT NO: 5,547,099 [IMAGE AVAILABLE] L24: 39 of 52
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ABSTRACT:

US PAT NO: 5,547,099 [IMAGE AVAILABLE] L24: 39 of 52
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ART-UNIT: 183
PRIM-EXNR: Patricia R. Moody

ABSTRACT:

US PAT NO: 5,547,099 [IMAGE AVAILABLE] L24: 39 of 52
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ART-UNIT: 183
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ABSTRACT:

US PAT NO: 5,547,099 [IMAGE AVAILABLE] L24: 39 of 52
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APPL-NO: 07/721,761
DATE FILED: Jun. 12, 1991
ART-UNIT: 183
PRIM-EXNR: Patricia R. Moody

ABSTRACT:

By this invention, compositions and methods of use, related to β -beta- κ -ketacyl-ACP synthase, hereinafter also referred to as "synthase", are provided. Also of interest are methods and compositions of amino acid and nucleic acid sequences related to biologically active plant synthase(s). In particular, synthase protein preparations which have relatively high turnover (specific activity) are of interest for use in a variety of applications, in vitro and in vivo. Especially, protein preparations having synthase I and/or synthase II activities are contemplated hereunder. Synthase activities are distinguished by the preferential activity towards longer and shorter acyl-ACPs. Protein preparations having preferential activity towards shorter acyl-ACPs are synthase I-type. Synthases having preferential activity towards longer acyl-ACPs are synthase II-type. Of special interest are synthases obtainable from *Ricinus communis*.

ABSTRACT:

US PAT NO: 5,547,099 [IMAGE AVAILABLE] L24: 39 of 52

polypeptides comprising extracellular portions of cytokine receptor polypeptides attached to a sequence encoding portions of IgG polypeptides. The invention relates generally, as well, to DNA sequences encoding chimeric polypeptides comprising extracellular portions of cytokine receptor polypeptides attached through oligomers encoding specifically cleavable peptide linkers to a sequence encoding portions of IgG heavy chain polypeptides. More specifically, the invention relates to a construction in which a cDNA sequence encoding the extracellular domain of the human 55 kD TNF receptor is attached through an oligomer encoding a thrombin-sensitive peptide linker to a sequence encoding the F_{subc} portion and hinge region of a mouse IgG1 heavy chain. The invention relates as well to uses of the chimeric polypeptide, including, use as a reagent for the **antagonism** and assay of TNF and lymphokines from diverse species, use as a means of determining the mechanism by which TNF, or analogs thereof, interacts with the TNF receptor, use as an antitumor reagent, particularly against placental tumors, and, use as a reagent capable of controlling birth.

US PAT NO: 5,126,240 [IMAGE AVAILABLE] L24: 41 of 52
DATE ISSUED: Jun. 30, 1992
TITLE: Hybrids and monoclonal paratopic molecules to apolipoprotein A-1
INVENTOR: Linda K. Curtiss, 8926 Flanders Dr., San Diego, CA 92126
APPL-NO: 06/913,061
DATE FILED: Sep. 29, 1986
ART-UNIT: 187
PRIM-EXMR: Christiane Nucker
ASST-EXMR: Laure A. Schenier
US PAT NO: 5,126,240 [IMAGE AVAILABLE] L24: 41 of 52

ABSTRACT:
Hybrids and their secreted paratopic molecules that immunoreact with apolipoprotein A-1 are disclosed, as are assay methods for determining the presence and amount of apo A-1, and diagnostic systems useful in performing those determinations. Monoclonal paratopic molecules secreted by hybridomas having ATCC accession numbers HB 9200, HB 9201, HB 9202, HB 9203 and HB 9204 are utilized.

US PAT NO: 5,126,240 [IMAGE AVAILABLE] L24: 41 of 52
DATE ISSUED: Jun. 30, 1992
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INVENTOR: Linda K. Curtiss, 8926 Flanders Dr., San Diego, CA 92126
APPL-NO: 06/913,061
DATE FILED: Sep. 29, 1986
ART-UNIT: 187
PRIM-EXMR: Christiane Nucker
ASST-EXMR: Laure A. Schenier
US PAT NO: 5,126,240 [IMAGE AVAILABLE] L24: 41 of 52

ABSTRACT:
Hybrids and their secreted paratopic molecules that immunoreact with apolipoprotein A-1 are disclosed, as are assay methods for determining the presence and amount of apo A-1, and diagnostic systems useful in performing those determinations. Monoclonal paratopic molecules secreted by hybridomas having ATCC accession numbers HB 9200, HB 9201, HB 9202, HB 9203 and HB 9204 are utilized.

US PAT NO: 5,015,995 [IMAGE AVAILABLE] L24: 42 of 52
DATE ISSUED: Jul. 30, 1991
TITLE: Test method involving substance-conjugated complement component Clq
INVENTOR: Fumiaki Taguchi, 14-1, Yokodai 5-chome, Sagamihara-shi, Kanagawa-ken, Japan
Isamu Matsui, Yokohama, Japan
Kunio Ezawa, Tokyo, Japan
Jun Kurata, Tokyo, Japan
Isamu Mitsu, Yokohama, Japan
Kunio Ezawa, Tokyo, Japan
Kuniaki Taguchi, both of, Japan (foreign corp.)
ASSIGNEE: Celpis Food Industry, both of, Japan (foreign corp.)
APPL-NO: 07/039,534
DATE FILED: Apr. 16, 1987
ART-UNIT: 187
PRIM-EXMR: Robert A. Wax
ASST-EXMR: J. Shucker
LEGAL-REP: Lyon & Lyon
US PAT NO: 5,015,995 [IMAGE AVAILABLE] L24: 42 of 52

ABSTRACT:
Hybrids and their secreted paratopic molecules that immunoreact with apolipoprotein A-1 are disclosed, as are assay methods for determining the presence and amount of apo A-1, and diagnostic systems useful in performing those determinations. Monoclonal paratopic molecules secreted by hybridomas having ATCC accession numbers HB 9200, HB 9201, HB 9202, HB 9203 and HB 9204 are utilized.

US PAT NO: 5,015,995 [IMAGE AVAILABLE] L24: 42 of 52
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INVENTOR: Fumiaki Taguchi, 14-1, Yokodai 5-chome, Sagamihara-shi, Kanagawa-ken, Japan
Isamu Matsui, Yokohama, Japan
Kunio Ezawa, Tokyo, Japan
Jun Kurata, Tokyo, Japan
Isamu Mitsu, Yokohama, Japan
Kunio Ezawa, Tokyo, Japan
Kuniaki Taguchi, both of, Japan (foreign corp.)
ASSIGNEE: Celpis Food Industry, both of, Japan (foreign corp.)
APPL-NO: 07/039,534
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ART-UNIT: 187
PRIM-EXMR: Robert A. Wax
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LEGAL-REP: Lyon & Lyon
US PAT NO: 5,015,995 [IMAGE AVAILABLE] L24: 42 of 52

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Hybrids and their secreted paratopic molecules that immunoreact with apolipoprotein A-1 are disclosed, as are assay methods for determining the presence and amount of apo A-1, and diagnostic systems useful in performing those determinations. Monoclonal paratopic molecules secreted by hybridomas having ATCC accession numbers HB 9200, HB 9201, HB 9202, HB 9203 and HB 9204 are utilized.

US PAT NO: 5,015,995 [IMAGE AVAILABLE] L24: 42 of 52
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INVENTOR: Fumiaki Taguchi, 14-1, Yokodai 5-chome, Sagamihara-shi, Kanagawa-ken, Japan
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ASSIGNEE: Celpis Food Industry, both of, Japan (foreign corp.)
APPL-NO: 07/039,534
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ART-UNIT: 187
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LEGAL-REP: Lyon & Lyon
US PAT NO: 5,015,995 [IMAGE AVAILABLE] L24: 42 of 52

ABSTRACT:
Hybrids and their secreted paratopic molecules that immunoreact with apolipoprotein A-1 are disclosed, as are assay methods for determining the presence and amount of apo A-1, and diagnostic systems useful in performing those determinations. Monoclonal paratopic molecules secreted by hybridomas having ATCC accession numbers HB 9200, HB 9201, HB 9202, HB 9203 and HB 9204 are utilized.

US PAT NO: 5,015,995 [IMAGE AVAILABLE] L24: 42 of 52
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INVENTOR: Fumiaki Taguchi, 14-1, Yokodai 5-chome, Sagamihara-shi, Kanagawa-ken, Japan
Isamu Matsui, Yokohama, Japan
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Jun Kurata, Tokyo, Japan
Isamu Mitsu, Yokohama, Japan
Kunio Ezawa, Tokyo, Japan
Kuniaki Taguchi, both of, Japan (foreign corp.)
ASSIGNEE: Celpis Food Industry, both of, Japan (foreign corp.)
APPL-NO: 07/039,534
DATE FILED: Apr. 16, 1987
ART-UNIT: 187
PRIM-EXMR: Robert A. Wax
ASST-EXMR: J. Shucker
LEGAL-REP: Lyon & Lyon
US PAT NO: 5,015,995 [IMAGE AVAILABLE] L24: 42 of 52

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Hybrids and their secreted paratopic molecules that immunoreact with apolipoprotein A-1 are disclosed, as are assay methods for determining the presence and amount of apo A-1, and diagnostic systems useful in performing those determinations. Monoclonal paratopic molecules secreted by hybridomas having ATCC accession numbers HB 9200, HB 9201, HB 9202, HB 9203 and HB 9204 are utilized.

US PAT NO: 5,015,995 [IMAGE AVAILABLE] L24: 42 of 52
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Kunio Ezawa, Tokyo, Japan
Jun Kurata, Tokyo, Japan
Isamu Mitsu, Yokohama, Japan
Kunio Ezawa, Tokyo, Japan
Kuniaki Taguchi, both of, Japan (foreign corp.)
ASSIGNEE: Celpis Food Industry, both of, Japan (foreign corp.)
APPL-NO: 07/039,534
DATE FILED: Apr. 16, 1987
ART-UNIT: 187
PRIM-EXMR: Robert A. Wax
ASST-EXMR: J. Shucker
LEGAL-REP: Lyon & Lyon
US PAT NO: 5,015,995 [IMAGE AVAILABLE] L24: 42 of 52

ABSTRACT:
Hybrids and their secreted paratopic molecules that immunoreact with apolipoprotein A-1 are disclosed, as are assay methods for determining the presence and amount of apo A-1, and diagnostic systems useful in performing those determinations. Monoclonal paratopic molecules secreted by hybridomas having ATCC accession numbers HB 9200, HB 9201, HB 9202, HB 9203 and HB 9204 are utilized.

US PAT NO: 5,019,384 [IMAGE AVAILABLE] L24: 43 of 52
DATE ISSUED: May 28, 1991
TITLE: Immunomodulating compositions and their use
INVENTOR: Jean G. Guillot, Paris, France
Malcolm L. Gerber, Weston, MA
ASSIGNEE: Massachusetts Institute of Technology, Cambridge, MA (U.S. corp.)
APPL-NO: 07/144,548
DATE FILED: Nov. 13, 1989
ART-UNIT: 189
PRIM-EXMR: John Dell
ASST-EXMR: Christina Chan
LEGAL-REP: Bertram I. Rowland
US PAT NO: 5,019,384 [IMAGE AVAILABLE] L24: 43 of 52

ABSTRACT:
Novel methods or compositions are provided for modulating the immune system, so as to be able to selectively stimulate or inactivate lymphocytes in relation to a particular transplantation antigen content. Particularly, mixtures may be employed associated with the more common transplantation antigens of a host population. In this manner, a large number of people can be treated, for example, by immunization, stimulation of particular T-cells or B-cells in relation to a pathogenic invasion of other, aberrant state, e.g., neoplasia, treatment of autoimmune diseases, and the like. Particularly, the compositions may involve an oligopeptide involving as a first region a consensus sequence and an epitope or the first region may be joined to a second region comprising an antibody target sequence which is capable of competing with an epitopic site of an antigen of interest.

US PAT NO: 4,382,423 [IMAGE AVAILABLE] L24: 46 of 52
DATE ISSUED: Nov. 21, 1989
TITLE: Substance-conjugated complement component Clq
INVENTOR: Fumiaki Taguchi, 14-1, Yokodai 5-chome, Sagamihara-shi, Kanagawa-ken, Japan
Isamu Mitsu, Yokohama, Japan
Kunio Ezawa, Tokyo, Japan
Jun Kurata, Tokyo, Japan
Kuniaki Taguchi, both of, Japan (foreign corp.)
ASSIGNEE: Celpis Food Industry, both of, Japan (foreign corp.)
APPL-NO: 07/032,025
DATE FILED: Mar. 3, 1987
ART-UNIT: 182
PRIM-EXMR: Sam Rosen
ASST-EXMR: Darby & Darby
LEGAL-REP: Darby & Darby
US PAT NO: 4,382,423 [IMAGE AVAILABLE] L24: 46 of 52

ABSTRACT:
Novel methods or compositions are provided for modulating the immune system, so as to be able to selectively stimulate or inactivate lymphocytes in relation to a particular transplantation antigen content. Particularly, mixtures may be employed associated with the more common transplantation antigens of a host population. In this manner, a large number of people can be treated, for example, by immunization, stimulation of particular T-cells or B-cells in relation to a pathogenic invasion of other, aberrant state, e.g., neoplasia, treatment of autoimmune diseases, and the like. Particularly, the compositions may involve an oligopeptide involving as a first region a consensus sequence and an epitope or the first region may be joined to a second region comprising an antibody target sequence which is capable of competing with an epitopic site of an antigen of interest.

US PAT NO: 4,382,423 [IMAGE AVAILABLE] L24: 46 of 52
DATE ISSUED: Nov. 21, 1989
TITLE: Substance-conjugated complement component Clq
INVENTOR: Fumiaki Taguchi, 14-1, Yokodai 5-chome, Sagamihara-shi, Kanagawa-ken, Japan
Isamu Mitsu, Yokohama, Japan
Kunio Ezawa, Tokyo, Japan
Jun Kurata, Tokyo, Japan
Kuniaki Taguchi, both of, Japan (foreign corp.)
ASSIGNEE: Celpis Food Industry, both of, Japan (foreign corp.)
APPL-NO: 07/032,025
DATE FILED: Mar. 3, 1987
ART-UNIT: 182
PRIM-EXMR: Sam Rosen
ASST-EXMR: Darby & Darby
LEGAL-REP: Darby & Darby
US PAT NO: 4,382,423 [IMAGE AVAILABLE] L24: 46 of 52

ABSTRACT:
A substance-conjugated complement component Clq is provided. A substance such as a signal emitting substances or cell function regulating substances is conjugated via a sulfur atom to at least one site of the component. The site is not involved in binding immunoglobulins. A marker-labelled complement component Clq is used for measuring a complement-binding antibody, an antigen, a neutralizing antibody or a substance produced internally of and at the surface of a cell or a microorganism by measuring the marker.

US PAT NO: 4,328,936 [IMAGE AVAILABLE] L24: 47 of 52
DATE ISSUED: May 9, 1989
TITLE: Assay method and diagnostic system for determining the ratio of apo B-100 to apo A-1 in a blood sample
INVENTOR: Richard S. Smith, Del Mar, CA
Doreen M. Heige, San Diego, CA
Linda K. Curtiss, San Diego, CA
Joseph L. Witztum, San Diego, CA
Steven Young, San Diego, CA
ASSIGNEE: Scripps Clinic and Research Foundation, La Jolla, CA (U.S. corp.)
APPL-NO: 06/913,140
DATE FILED: Sep. 29, 1986
ART-UNIT: 182
PRIM-EXMR: Robert J. Warden
ASST-EXMR: Stephen C. Wieder
LEGAL-REP: Dressler, Goldsmith, Shore, Sulker & Milmanow, Ltd.
US PAT NO: 4,328,936 [IMAGE AVAILABLE] L24: 47 of 52

ABSTRACT:
A substance-conjugated complement component Clq is provided. A substance such as a signal emitting substances or cell function regulating substances is conjugated via a sulfur atom to at least one site of the component. The site is not involved in binding immunoglobulins. A marker-labelled complement component Clq is used for measuring a complement-binding antibody, an antigen, a neutralizing antibody or a substance produced internally of and at the surface of a cell or a microorganism by measuring the marker.

US PAT NO: 4,328,936 [IMAGE AVAILABLE] L24: 47 of 52
DATE ISSUED: May 9, 1989
TITLE: Assay method and diagnostic system for determining the ratio of apo B-100 to apo A-1 in a blood sample
INVENTOR: Richard S. Smith, Del Mar, CA
Doreen M. Heige, San Diego, CA
Linda K. Curtiss, San Diego, CA
Joseph L. Witztum, San Diego, CA
Steven Young, San Diego, CA
ASSIGNEE: Scripps Clinic and Research Foundation, La Jolla, CA (U.S. corp.)
APPL-NO: 06/913,140
DATE FILED: Sep. 29, 1986
ART-UNIT: 182
PRIM-EXMR: Robert J. Warden
ASST-EXMR: Stephen C. Wieder
LEGAL-REP: Dressler, Goldsmith, Shore, Sulker & Milmanow, Ltd.
US PAT NO: 4,328,936 [IMAGE AVAILABLE] L24: 47 of 52

ABSTRACT:
A substance-conjugated complement component Clq is provided. A substance such as a signal emitting substances or cell function regulating substances is conjugated via a sulfur atom to at least one site of the component. The site is not involved in binding immunoglobulins. A marker-labelled complement component Clq is used for measuring a complement-binding antibody, an antigen, a neutralizing antibody or a substance produced internally of and at the surface of a cell or a microorganism by measuring the marker.

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ABSTRACT:
Methods for recovering t-PA from a liquid medium are disclosed. The methods comprise connecting a liquid medium with at least one substance capable of effecting a separation of intact t-PA from degraded t-PA therefrom recovering the intact t-PA free from other unrelated protein. The present invention also provides compounds produced by this method, compositions comprising intact one-chain t-PA and pharmaceutical compositions containing them and methods for using such compositions.

thioesterase II marker

INVENTOR: Stuart Smith, Lafayette, CA
Louis J. Libertini, Corvallis, OR
Betty J. Thompson, San Francisco, CA
ASSIGNEE: Children's Hospital Medical Center of Northern California,
Oakland, CA (U.S. corp.)

APPL-NO: 08/566,030

DATE FILED: Dec. 9, 1993

ART-UNIT: 128

PRIM-EXM: Sidney Marantz

LEGAL-REP: Townsend and Townsend

US PAT NO: 5,295,693 [IMAGE AVAILABLE]

L24: 48 of 52

ABSTRACT:

Methods are provided for detecting thioesterase II enzyme in both tissue and serum samples. The presence of thioesterase II in other than mammary epithelial tissue is associated with neoplastic mammary epithelial cells.

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L24: 51 of 52

ABSTRACT:

The present invention relates to a therapeutic agent for rheumatic disease comprising an anti-**Fas** "monoclonal"** antibody** or the combination of an anti-**Fas** "monoclonal"** antibody** and a medical substance having an **inhibitory** effect on cell proliferation as an active ingredient. The anti-**Fas** "monoclonal"** antibody** of this invention reacts with the **Fas** antigen in synovial cells of patients with rheumatoid arthritis, especially the human **Fas** antigen specifically and expresses apoptosis on synovial cells. <IMAGE>

WO000510540A1

L24: 52 of 52

ABSTRACT:

<CHG DATE=19960607 STATUS=0>The present invention provides a panel of **monoclonal** **antibodies** and binding proteins which specifically bind to human **Fas** antigen. Some of the antibodies and binding proteins are capable of stimulating T cell proliferation, **inhibiting** binding of anti-**Fas** CH-11 **monoclonal** **antibody** to cells expressing **Fas** antigen, blocking anti-**Fas** CH-11 **monoclonal** **antibody**-mediated lysis of cells, and blocking **Fas**-mediated lysis of cells. The invention also provides for conjugate compositions comprising the **monoclonal** **antibodies**.

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FILE USPAT
FILE USPAT

L1 51 S FAS

FILE 'JPO'

L2 95 S FAS

FILE 'EPO'

L3 32 S FAS

TOTAL FOR ALL FILES

L4 63 S FAS

FILE USPAT

L5 140003'S INHIB? OR REDUC? OR SUPPRESS? OR ANTAGON?

FILE 'EPO'

L6 803500 S INHIB? OR REDUC? OR SUPPRESS? OR ANTAGON?

FILE USPAT

L7 216498 S INHIB? OR REDUC? OR SUPPRESS? OR ANTAGON?

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L8 242003'S INHIB? OR REDUC? OR SUPPRESS? OR ANTAGON?

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L9 11553 S MONOCLONAL(W)ANTIBOD?
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FILE 'EPO'
L15 2 S 14(10A)8(10A)L12
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FILE 'EPO'
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L22 2 S 14 AND L8 AND L12
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